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D.J.
0933-098-a
Formal Drawing
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jeffrey Allan Green et al.	Docket No.: 0933 RPB REF: CRUS-0154
Serial Number: 09/598,680	Art Unit: 2745
Filing Date: June 21, 2000	Examiner: UNASSIGNED
Title: INTER-MODULATION DISTORTION COMPENSATION	

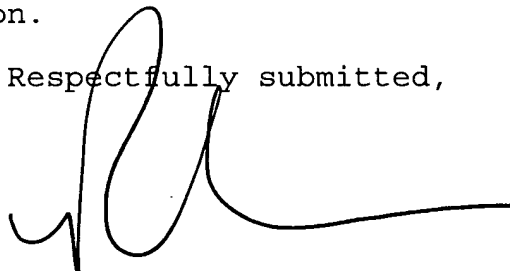
SUBMISSION OF FORMAL DRAWINGS

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20031

Sir:

Submitted herewith are **ELEVEN (11)** sheets of formal drawings
for the above-identified application.

Respectfully submitted,



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September 1, 2000
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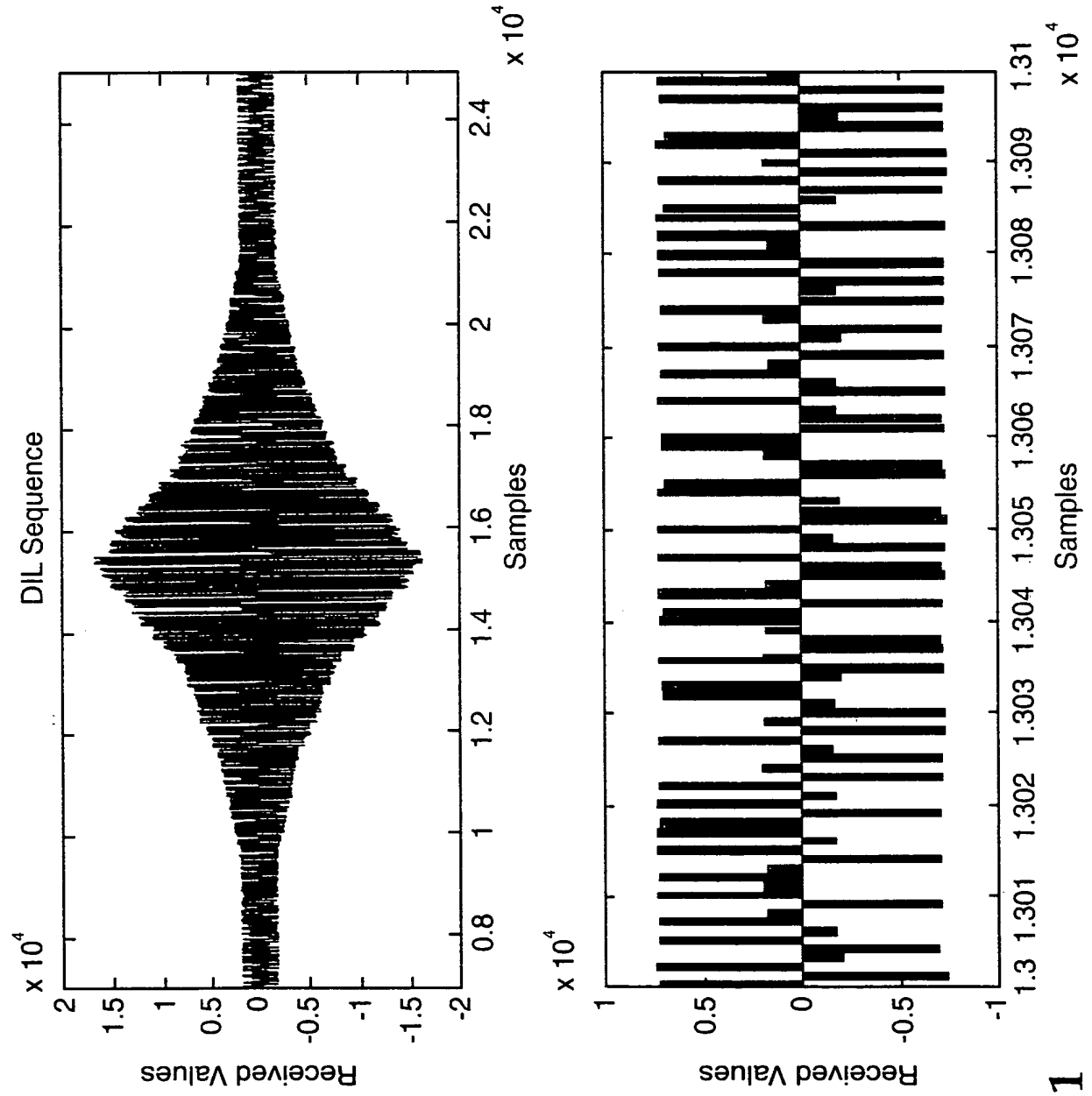


Figure 1

Frame	Sign and Training Pattern					
	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6
1	+R	-T	-R	+T	-R	-T
2	+T	+R	-T	+R	+T	-R
3	+R	+T	-R	+T	-T	-R
4	-T	+T	+R	+T	-T	+T
5	+T	-R	-T	+T	-T	+R
6	-T	+T	+T	-T	-R	-T
7	+T	-T	+T	+R	+T	-T
8	-R	-T	+T	-T	+T	-T
9	+T	+R	+T	-T	+R	-T
10	+R	-T	+T	+R	-T	-R
11	-T	+T	-T	-T	+T	+T
12	+T	-R	-T	+T	+R	+T
13	-R	-T	+T	-R	-T	+T
14	-T	+T	-R	+T	-T	+R
15	-T	+T	+R	-T	+R	+T
16	-T	-R	+T	-R	-T	+R
17	-T	-T	+R	+T	+T	-T
18	+T	+R	-T	-T	+T	-T
19	-R	+T	-T	-T	-R	+T
20	+T	-T	-T	-R	+T	+T

The "T" in the table represents a training amplitude.

The "R" in the table represents a reference amplitude.

The "+" or "-" represents the sign of the symbol.

Figure 2

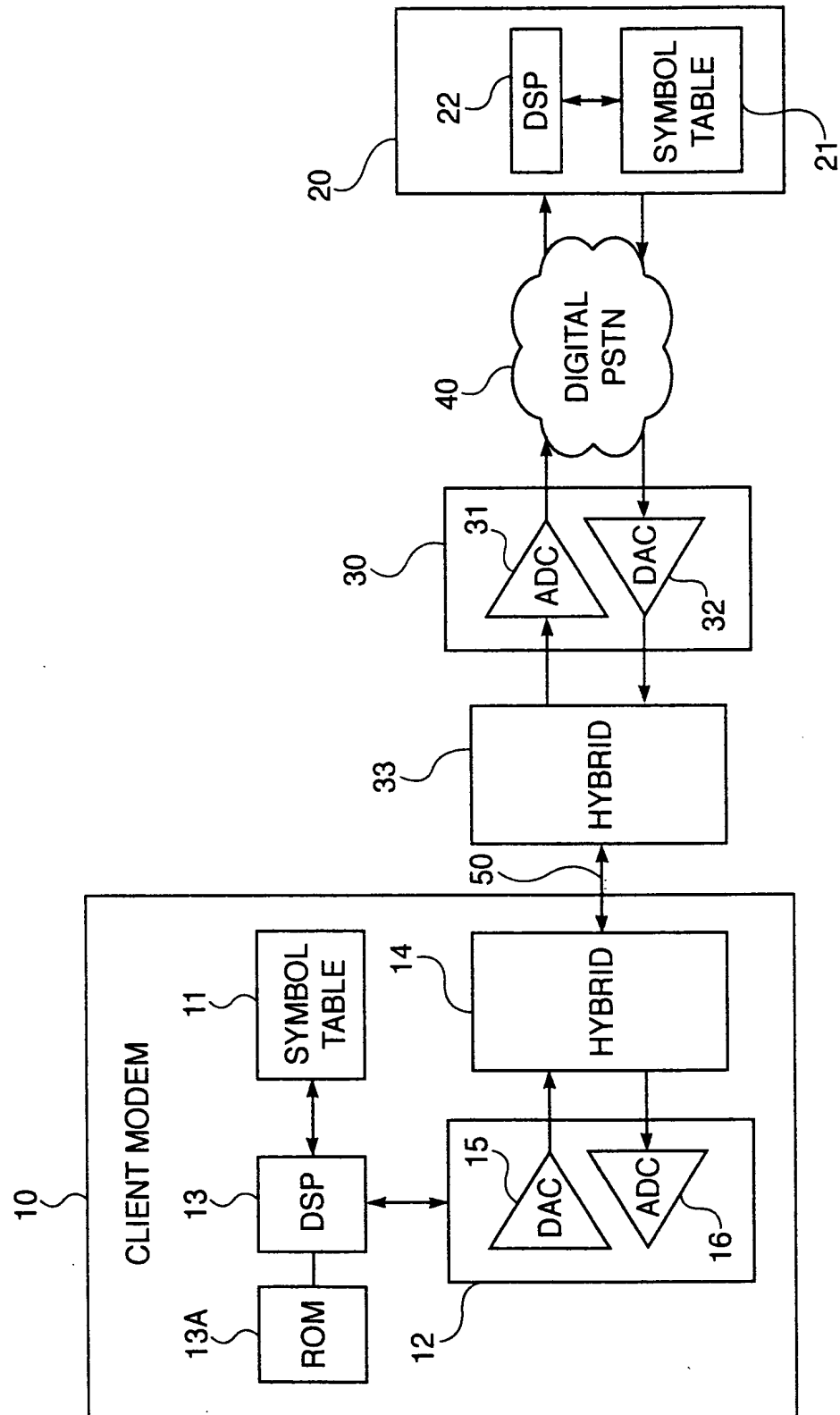


Figure 3

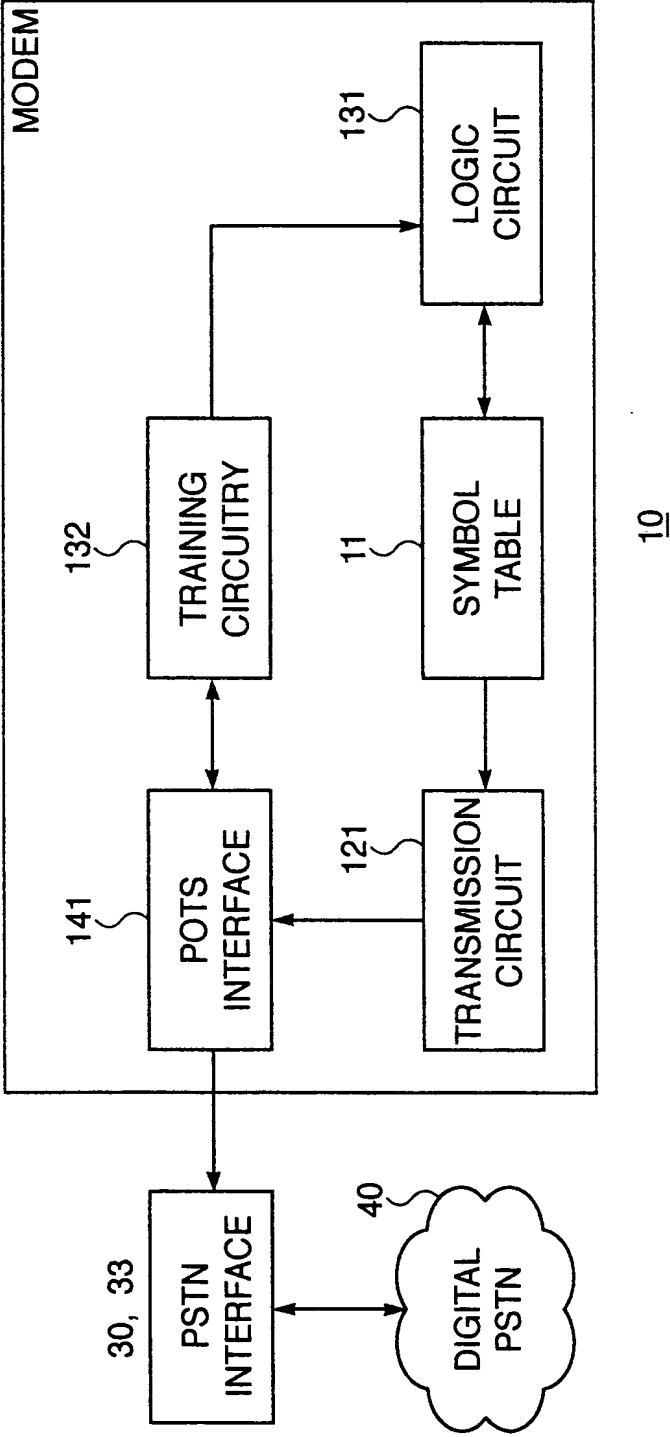


Figure 4

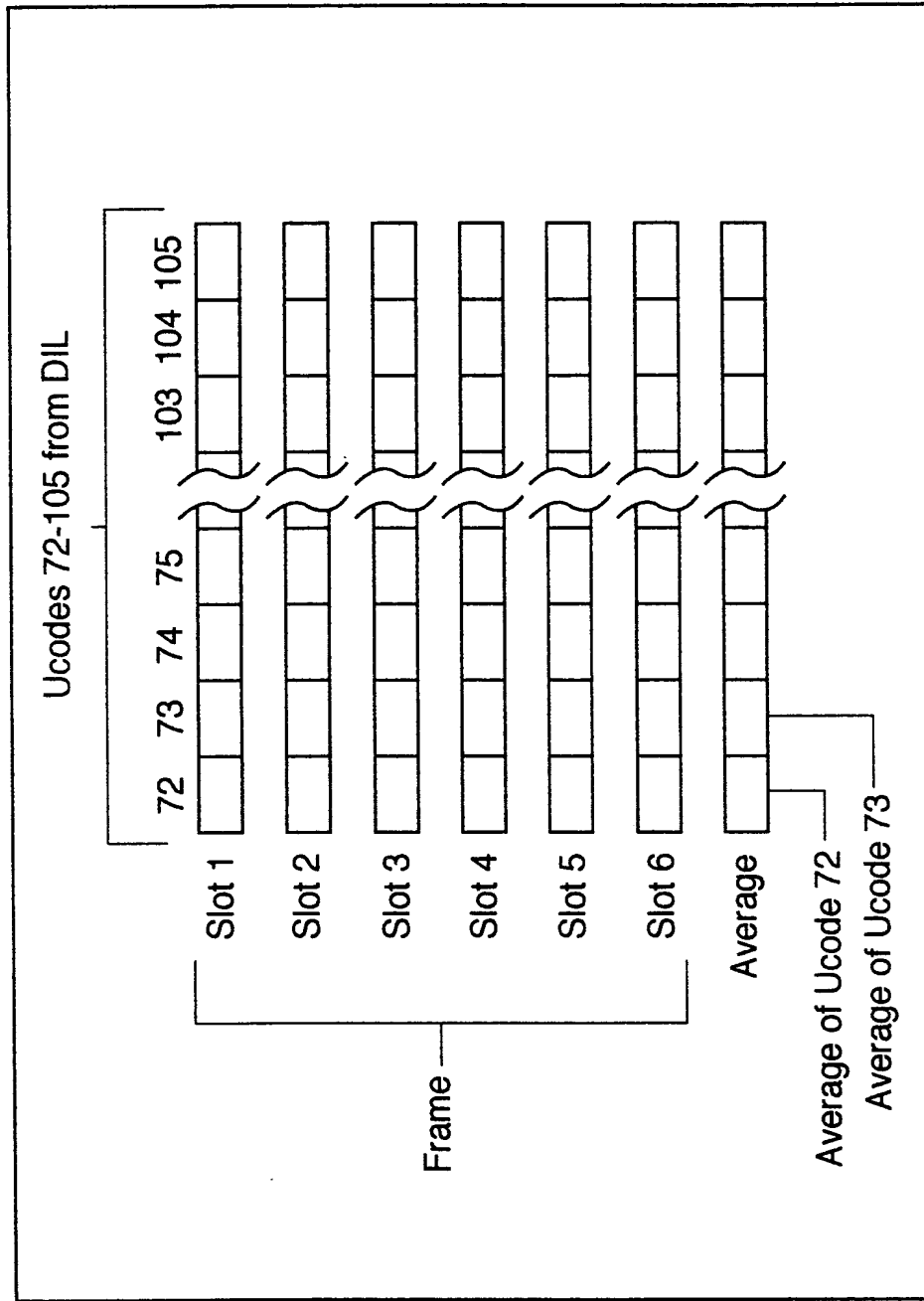


Figure 5

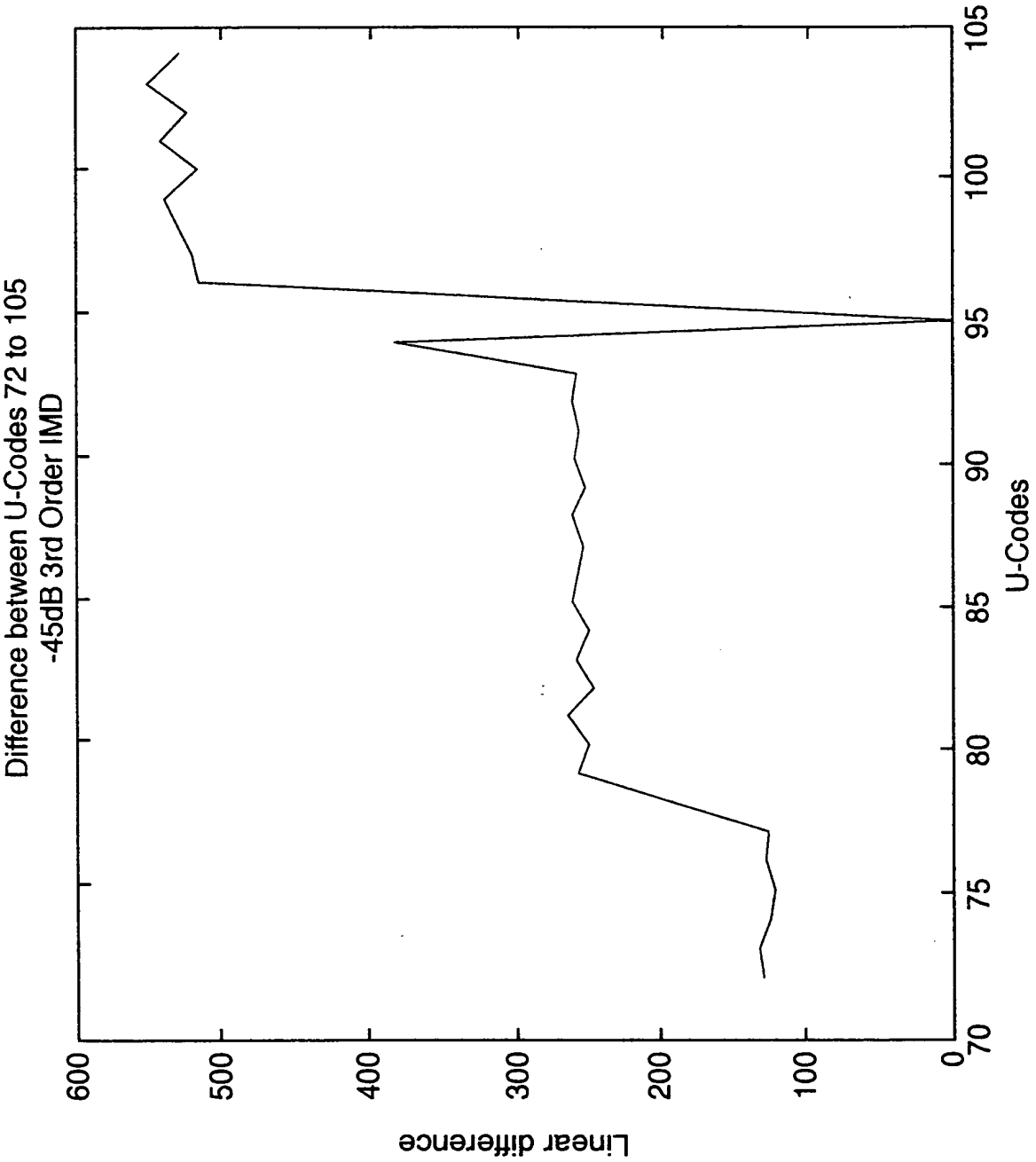


Figure 6

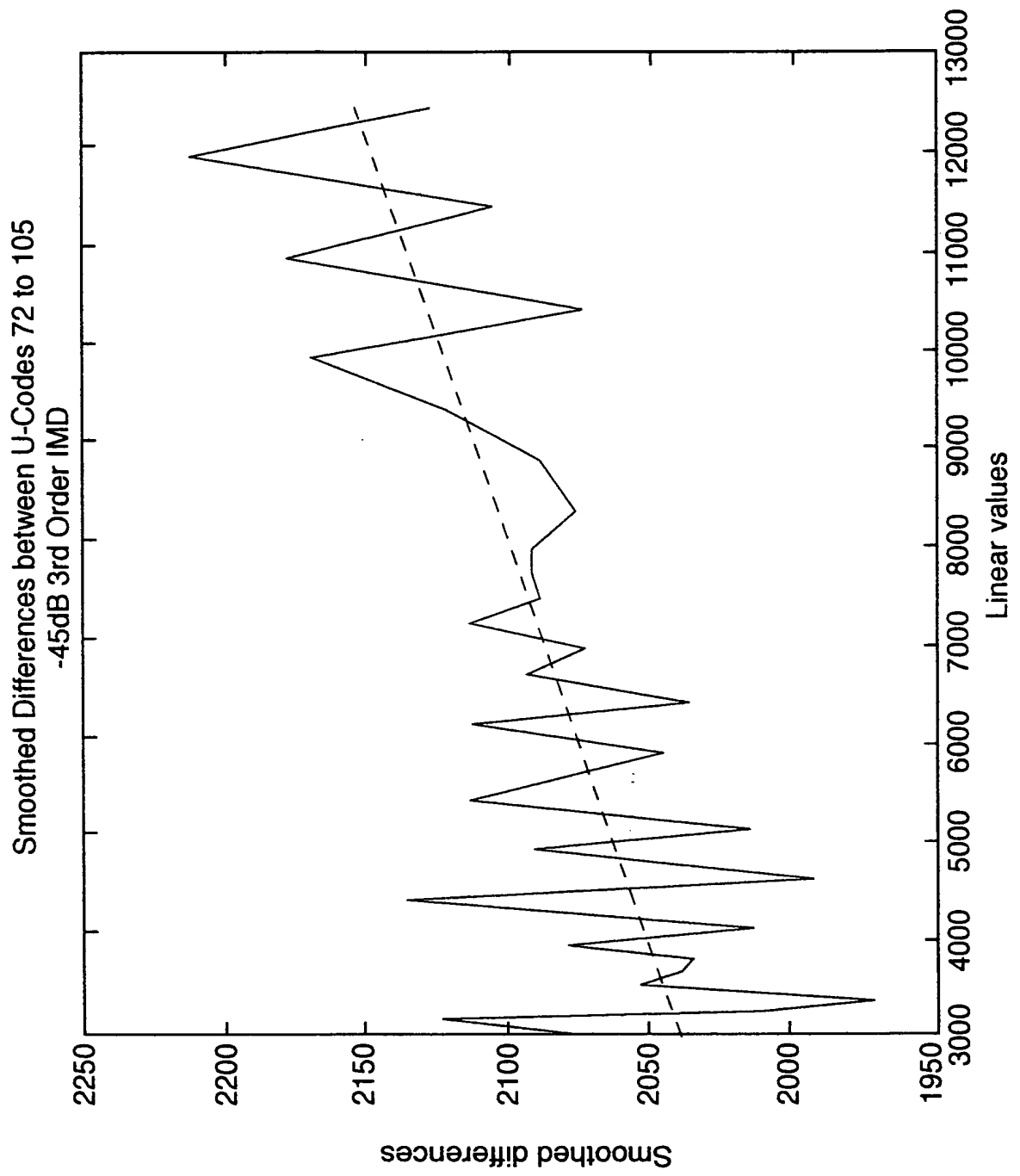
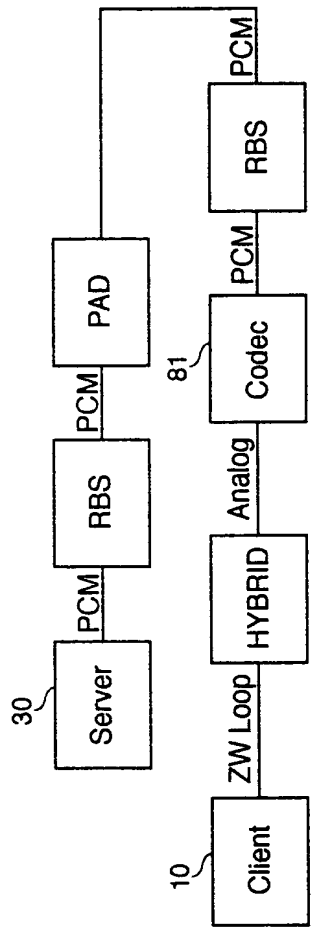


Figure 7



PCM -an 8-bit μ law or A-law digital symbol transmitted over the network. The symbol represents a signal amplitude.
Linear - the linear value corresponding to the digital symbol (see G.711).
Analog - the local twisted-pair from the central office to the modem.

Figure 8

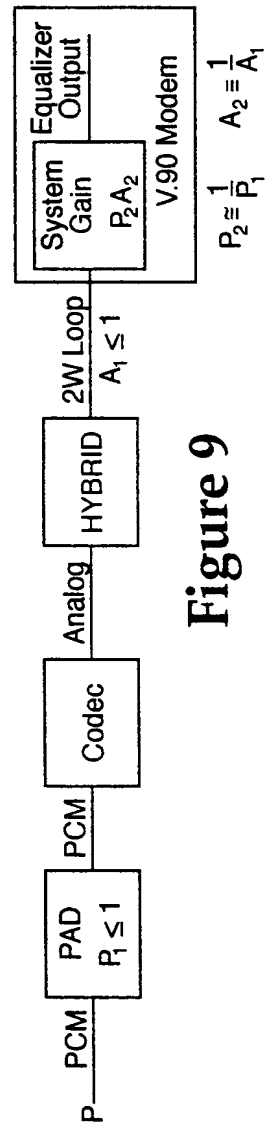


Figure 9

$$\text{Error} = \frac{\sum_{n=\text{Ucode } 72}^{\text{Ucode } 105} |\text{Received Sample}_n \cdot \text{Test Fraction} - \text{SLICED}[\text{Received Sample}_n \cdot \text{Test Fraction}]|}{\text{Test Fraction}}$$

SLICED[x] - results in the G.711 value closest to x.
Ucode# - refers to PCM symbols sent by the server (see V.90 specification)
Received Sample_n - an average received value from the DIL sequence corresponding to Ucode#.
Test Fraction - a value between 1.0 and 0.25 that is adjusted to result in a minimum error

Figure 10

U - Code Sent	Avg. Received Value	Using 0.5 as the Text Fraction	Absolute Error	Using 0.5077 as the Text Fraction	Absolute Error
90	6673	3337	51	3388	0
91	6925	3463	53	3516	0
92	7178	3589	55	3644	0
93	7430	3715	57	3772	0
94	7682	3841	59	3900	0
95	8060	4030	62	4092	0
96	8060	4030	62	4092	0
97	8564	4282	66	4348	0
98	9068	4534	70	4604	0
99	9573	4787	73	4860	0
100	10077	5039	77	5116	0
101	10581	5291	81	5372	0
102	11085	5543	85	5628	0
103	11590	5795	89	5884	0
104	12094	6047	93	6140	0
105	12598	6299	97	6396	0

Figure 11

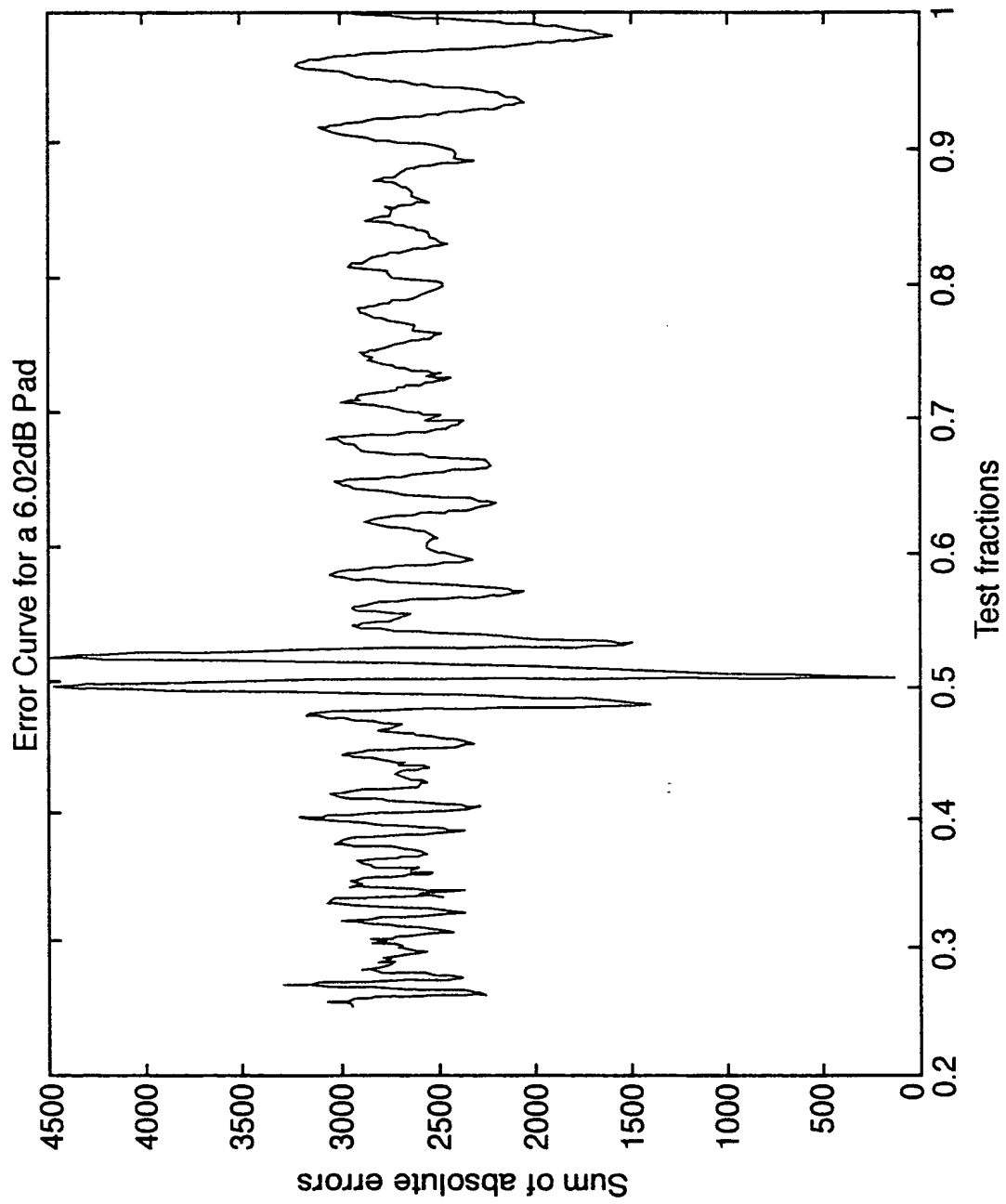


Figure 12

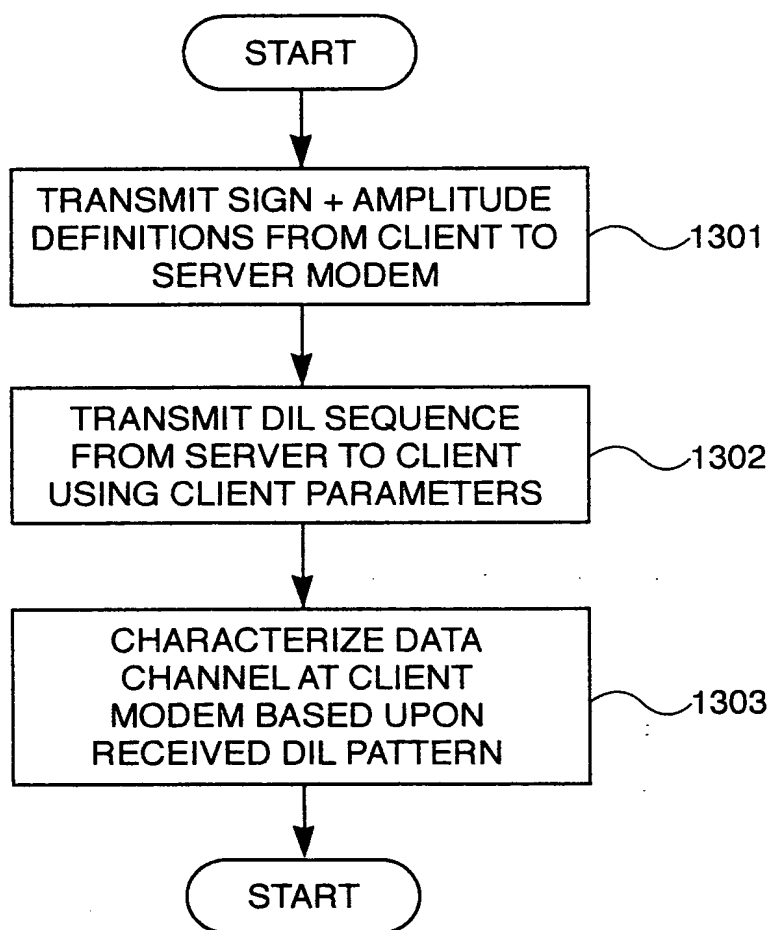


Figure 13